

**U.S. DEPARTMENT OF ENERGY
DEPARTMENT-WIDE
FUNCTIONAL AREA QUALIFICATION STANDARD**

SAFEGUARDS AND SECURITY QUALIFICATION STANDARD

Defense Nuclear Facilities Technical Personnel



**U.S. Department of Energy
Washington, D.C. 20585**

May 1995

Approval and Concurrence

The Director of the Office of Nonproliferation and National Security is the Management Sponsor for the Department-wide Safeguards and Security Qualification Standard. The Management Sponsor is responsible for reviewing the Qualification Standard to ensure that the technical content is accurate and adequate for Department-wide application. The Management Sponsor, in coordination with the Human Resources organization, is also responsible for ensuring that the Qualification Standard is maintained current. Concurrence with this Qualification Standard by the Director of the Office of Nonproliferation and National Security is indicated by the signature below.

The Technical Personnel Program Coordinator (TPPC) is responsible for coordinating the consistent development and implementation of the Technical Qualification Program throughout the Department of Energy. Concurrence with this Qualification Standard by the Technical Personnel Program Coordinator is indicated by the signature below.

The Technical Excellence Executive Committee (TEEC) consists of senior Department of Energy managers. This Committee is responsible for reviewing and approving the Qualification Standard for Department-wide application. Approval of this Qualification Standard by the Technical Excellence Executive Committee is indicated by the signature below.

NOTE: The signatures below reflect concurrence and approval of this Qualification Standard for interim implementation. Final concurrence and approval will occur in December 1995, pending comments received based upon implementation.

CONCURRENCE:

Director, Office of Nonproliferation
and National Security

Technical Personnel Program
Coordinator

APPROVAL:

Chairman
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**U.S. DEPARTMENT OF ENERGY
FUNCTIONAL AREA QUALIFICATION STANDARD**

FUNCTIONAL AREA

Safeguards and Security

PURPOSE

The Technical Qualification Program is divided into three levels of technical competence and qualification. The General Technical Base Qualification Standard establishes the base technical competence required of all Department of Energy defense nuclear facility technical personnel. The Functional Area Qualification Standards build on the requirements of the General Technical Base Qualification Standard and establish Department-wide functional competency requirements in each of the identified functional areas. Office/facility-specific qualification standards establish unique operational competency requirements at the Headquarters or Field element, site, or facility level.

The Safeguards and Security Functional Area Qualification Standard establishes common functional area competency requirements for all Department of Energy safeguards and security technical personnel who provide management oversight or direction impacting the safe operation of defense nuclear facilities. Satisfactory and documented completion of the competency requirements contained in this Standard ensures that technical employees possess the minimum requisite competence to fulfill their functional area duties and responsibilities. Additionally, these competency requirements provide the functional foundation to assure successful completion of the appropriate Office/facility-specific qualification standard.

APPLICABILITY

This Standard applies to all Department of Energy safeguards and security technical personnel who provide management direction or oversight impacting the safe operation of defense nuclear facilities. Personnel designated by Headquarters or Field element line management as participants in the Technical Qualification Program are required to satisfy the competency requirements of this Standard as defined in DOE Order 3410, Training.

IMPLEMENTATION REQUIREMENTS

The competencies contained in the Standard are divided into the following four categories:

1. General Technical
2. Regulatory
3. Administrative
4. Management, Assessment, and Oversight

Each of the categories is defined by one or more competency statements indicated by bold print. The competency statements define the expected knowledge and/or skill that an individual must

possess and are requirements. Each of the competency statements is further explained by a listing of supporting knowledge and/or skill statements. The supporting knowledge and/or skill statements are not requirements and do not necessarily have to be fulfilled to meet the intent of the competency.

The competencies identify a familiarity level, a working level, or an expert level of knowledge; or they require the individual to demonstrate the ability to perform a task or activity. These levels are defined as follows:

Familiarity level is defined as basic knowledge of or exposure to the subject or process adequate to discuss the subject or process with individuals of greater knowledge.

Working level is defined as the knowledge required to monitor and assess operations/activities, to apply standards of acceptable performance, and to reference appropriate materials and/or expert advice as required to ensure the safety of Departmental activities.

Expert level is defined as a comprehensive, intensive knowledge of the subject or process sufficient to provide advice in the absence of procedural guidance.

Demonstrate the ability is defined as the actual performance of a task or activity in accordance with policy, procedures, guidelines, and/or accepted industry or Department practices.

Headquarters and Field elements shall establish a program and process to ensure that all defense nuclear facility technical personnel required to participate in the Technical Qualification Program meet the competency requirements contained in this Standard. Documentation of the completion of the requirements of this Standard shall be included in the employee's training and qualification record.

In selected cases, it may be necessary to exempt an individual from completing one or more of the competencies in this Functional Area Qualification Standard. Exemptions from individual competencies shall be justified and documented in accordance with DOE Order 3410, Training. Exemptions shall be requested by the individual's immediate supervisor, and approved one level above the individual's immediate supervisor.

Equivalencies may be granted for individual competencies based upon an objective evaluation of the employee's prior education, experience, and/or training. Documentation of equivalencies shall indicate how the competency requirements have been met. The supporting knowledge and/or skill statements should be considered when evaluating an individual's ability with respect to each competency requirement.

Training shall be provided to employees in the Technical Qualification Program who do not meet the competencies contained in the qualification standard. Departmental training will be based upon supporting knowledge and/or skill statements similar to the ones listed for each of the competency statements. Headquarters and Field elements should use the supporting knowledge and/or skill statements as a basis for evaluating the content of any training courses used to provide individuals with the requisite knowledge and/or skill required to meet the qualification standard competency statements.

DUTIES AND RESPONSIBILITIES

The following are duties and responsibilities normally expected of defense nuclear facility technical personnel assigned to the safeguards and security functional area:

- A. Plan, direct, and assess Department of Energy and contractor Protection Program Management.
- B. Plan, direct, and assess Department and contractor protection of classified and sensitive matter.
- C. Plan, direct, and assess Department and contractor protection of nuclear materials, property and Department facilities, and control and accountability of nuclear materials.
- D. Review, analyze, and trend Department and contractor incidents and performance occurrence data related to safeguards and security.
- E. Develop reports and conduct briefings regarding safeguards and security programs and activities.
- F. Serve as a Department subject matter expert (SME) and/or technical point-of-contact for safeguards and security activities.
- G. Develop, plan, conduct, and assess performance tests of safeguards and security elements and systems.
- H. Prepare, provide, and/or assess requests for the safeguards and security budget.
- J. Establish and maintain communications with the contractor, stakeholders, and other internal and external organizations.
- K. Identify safeguards and security program deficiencies and issues, develop corrective actions, track and oversee issue/deficiency closure.
- L. Develop, manage, and negotiate safeguards and security regulatory agreements, protocol, memoranda of understandings, and memoranda of agreements.
- M. Plan, direct, and assess Department and contractor personnel security programs.

Additional duties and responsibilities specific to the site, facility, operational activities, and/or other involved organizations shall be contained in the facility-specific qualification standard(s).

BACKGROUND AND EXPERIENCE

The U.S. Office of Personnel Management's Qualification Standards Handbook establishes minimum education, training, experience, or other relevant requirements applicable to a particular occupational series/grade level, as well as alternatives to meeting specified requirements.

The preferred education and experience for safeguards and security personnel is:

1. Education:

Bachelor of Science or Arts degree in a related field; or meeting the alternative requirements specified in the Qualifications Standards Handbook.

2. Experience:

Criminal justice, security, accounting, chemistry, engineering, physics, or other experience that has provided specialized experience in the various specialties of safeguards and security. Specialized experience may be demonstrated through possession of the competencies outlined in this Standard.

REQUIRED COMPETENCIES

The competencies contained in this Standard are distinct from those competencies contained in the General Technical Base Qualification Standard. All safeguards and security personnel must complete the competency requirements of the General Technical Base Qualification Standard prior to or in parallel with the completion of the competency requirements contained in this Standard. Each of the competency statements defines the level of expected knowledge and/or skill that an individual is required to possess to meet the intent of this Standard. The supporting knowledge and/or skill statements further describe the intent of the competency statements but are not requirements.

1. GENERAL TECHNICAL

Due to the specialized nature of the Safeguards and Security Functional Area, safeguards and security personnel shall complete the appropriate competency statements (1.1 - 1.9) as determined by line management consistent with assigned specialties. These competency statements correspond to: Physical Security (1.1 and 1.2); Personnel Security (1.3 -1.5); Material Control and Accountability (1.6 - 1.8); and, Information Security (1.9). The remaining competency statements (1.10 and 1.11) shall be completed by all safeguards and security personnel assigned to complete the competency requirements of this Standard.

Physical Security

1.1 Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of physical protection systems.

Supporting Knowledge and/or Skills

- a. Describe the three primary functions of a physical protection system.
- b. Describe the characteristics of an effective physical protection system.
- c. Describe the fundamental characteristics of:
 - Exterior intrusion sensors
 - Interior intrusion sensors
- d. Using a list of exterior and interior sensors, describe the classification that should be assigned to each type of sensor.
- e. Describe the types of exterior and interior sensors used within the Department.
- f. Describe the components of a comprehensive entry control system.
- g. Describe the types of entry control systems used within the Department.
- h. Describe the purpose of access delay in a physical protection system.
- i. Describe the type of access delay mechanisms used within the Department.
- j. Discuss the following terms:
 - Probability of detection
 - Delay time
- k. Demonstrate the modeling of a physical protection system using an adversary sequence diagram.

1.2 Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of protective force operation.

Supporting Knowledge and/or Skills

- a. Describe the levels and associated responsibilities of protective force personnel within the Department.
- b. Describe the role of a special response team.
- c. Discuss the following terms:
 - Interdiction
 - Interruption
 - Neutralization
 - Recapture
 - Denial
- d. Describe typical examples of Federal or State authority granted to Protective Force personnel.

Personnel Security

- 1.3 Safeguards and security personnel acting in personnel security shall demonstrate a working level knowledge of the access authorization (security clearance) process.**

Supporting Knowledge and/or Skills

- a. Discuss the following terms:
 - Derogatory information
 - Access authorization
 - Single scope background investigation
 - Suspension
- b. Discuss the process for screening reports of investigation for initial "Q" and "L" access authorizations.
- c. Explain the relevance in terms of risk assessment of the clearance criteria in 10 CFR 710, Criteria and Procedures for Determining Eligibility for Access to Classified Matter and Significant Quantities of Special Nuclear Material.
- d. Explain the purpose of the personnel security interview.

- 1.4 Safeguards and security personnel acting in personnel security shall demonstrate a familiarity level knowledge of security awareness activities.**

Supporting Knowledge and/or Skills

- a. Discuss the purposes for conducting the following types of briefings:
 - Initial
 - Comprehensive
 - Refresher
 - Termination

- b. Identify the topics that should be included in an initial briefing.

1.5 Safeguards and security personnel acting in personnel security shall demonstrate a familiarity level knowledge of classified visit activities.

Supporting Knowledge and/or Skills

- a. Discuss the security principle that serves as a basis for the Control of Classified Visits Program.
- b. Describe the process by which a Department of Defense (DoD) employee is approved to visit a Department of Energy (DOE) contractor site when the visit involves an exchange of Secret Restricted Data, Weapon Data.

Material Control and Accountability

1.6 Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of nuclear materials within the Department of Energy.

Supporting Knowledge and/or Skills

- a. Using a list of nuclear materials, identify the classification (special nuclear material, source, or other) of the material.
- b. Describe the categories of nuclear materials within the Department of Energy.
- c. Describe the attractiveness levels of nuclear materials within the Department.

1.7 Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of nuclear material accountability practices.

Supporting Knowledge and/or Skills

- a. Discuss the purpose of the following material control and accountability measurements:

- Accountability
 - Verification
 - Confirmatory
- b. Describe the three general types of measurement methods used to measure nuclear material.
- c. Discuss the following statistical terms:
- Random sample
 - Standard deviation
 - Measurement bias
 - Random error
- d. Describe the key elements of a nuclear material accounting system.
- e. Describe the purpose for conducting the following physical inventories:
- Periodic physical inventories
 - Special inventories
- f. Discuss the following physical inventory terms:
- Inventory difference
 - Shipper/receiver difference

1.8 Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of nuclear materials control within the Department of Energy.

Supporting Knowledge and/or Skills

- a. Describe the major containment areas required for nuclear materials within the Department.
- b. Discuss the function of each of the following nuclear material control programs:
- Access Control
 - Surveillance
 - Detection/Assessment
- c. Discuss the key elements of the above nuclear material control programs.

Information Security

1.9 Safeguards and security personnel acting in information security shall demonstrate a working level knowledge of information security systems.

Supporting Knowledge and/or Skills

- a. Describe the categories and levels of classification.
- b. Describe the function of the following information security programs:
 - Classified Matter Protection Control
 - Operations Security
 - Technical Surveillance Countermeasures
 - Violations of Laws, Losses, and Incidents of Security Concerns
 - Automated Information Systems Security
 - Sensitive Unclassified Information
 - Sensitive Compartmented Information Facilities and Foreign Intelligence Information
 - Special Access Programs
- c. Discuss the Department's counterintelligence program and its relationship to the information security program.

All Safeguards and Security Personnel

1.10 Safeguards and security personnel shall demonstrate a familiarity level knowledge of the Department of Energy safeguards and security program.

Supporting Knowledge and/or Skills

- a. Define the terms "safeguards" and "security" as they apply to the Department and provide examples of each.
- b. Describe the major safeguards and security objectives within the Department.
- c. Describe the major elements of the Department's Safeguards and Security program.
- d. Describe the levels of access authorization used within the Department.
- e. Describe the graded approach policy.

1.11 Safeguards and security personnel shall demonstrate a familiarity level knowledge of threat awareness.

Supporting Knowledge and/or Skills

- a. Discuss the following terms:
 - Abrupt theft
 - Protracted theft
 - Diversion
 - Radiological sabotage
 - Toxicological sabotage

- Industrial sabotage
 - Espionage
- b. Discuss the protection strategies of denial and containment.
- c. Discuss the basic adversary types recognized as a Department of Energy threat.

2. REGULATORY

NOTE: When Department of Energy (DOE) directives are referenced in the qualification standard, the most recent revision should be used.

Due to the specialized nature of the Safeguards and Security Functional Area, safeguards and security personnel shall complete the appropriate competency statements (2.1 - 2.16) as determined by line management consistent with assigned specialties. These competency statements correspond to: Physical Security (2.1 - 2.4); Personnel Security (2.5); Materials Control and Accountability (2.6 - 2.10); and, Information Security (2.11 - 2.16). The remaining competency statements (2.17 - 2.28) shall be completed by all safeguards and security personnel assigned to complete the competency requirements of this Standard.

Physical Security

2.1 Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of protection program operations as described in Department of Energy (DOE) Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M5632.IC-1, Manual for Protection and Control of Safeguards and Security Interests.

Supporting Knowledge and/or Skills

- a. Describe the five elements of protection and control planning.
 - Site-specific characteristics
 - Threat
 - Protection strategy
 - Planning
 - Graded protection
- b. Describe how the Design Basis Threat is used in safeguards and security program planning.
- c. Describe the method used to identify and characterize the range of potential adversary threats.
- d. Discuss the denial strategy used to protect safeguards and security interests.
- e. Describe the containment strategy for Category I and II special nuclear material.
- f. Discuss the recapture/recovery or pursuit strategy should containment fail.
- g. Discuss the programs designed to mitigate the consequence of acts of radiological/toxicological sabotage.
- h. Describe the methods for protection and control of classified matter.

- i. Describe the requirements for the protection of unclassified irradiated reactor fuel in transit.
- j. Discuss the graded approach in relation to the protection of safeguards and security interests.
- k. Discuss the requirements of the following protection elements:
 - Intrusion detection and assessment systems
 - Access control and entry/exit inspections
 - Barriers and locks
 - Secure storage
 - Communications
 - Acceptance and validation testing
 - Maintenance
 - Posting notices
 - Security badges and credentials

2.2 Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of the protection of special nuclear material as described in Department of Energy (DOE) Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M5632.1C - 1, Manual for Protection and Control of Safeguards and Security Interests.

Supporting Knowledge and/or Skills

- a. Describe access procedures to storage repositories.
- b. Describe procedures to prevent and/or detect unauthorized access to a storage repository.
- c. Describe the procedures for investigating and reporting abnormal conditions.
- d. Describe the protective responsibilities when special nuclear material is out of the vault.
- e. Describe the protective responsibilities when special nuclear material is in transit.
- f. Describe escort responsibilities when special nuclear material is in transit.
- g. Discuss the protection provided to vital equipment.

2.3 Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of security areas as described in Department of Energy (DOE) Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M5632.1C-1, Manual for Protection and Control of Safeguards and Security Interests.

Supporting Knowledge and/or Skills

- a. Describe the different security areas.
- b. Discuss controls to detect, assess, deter, and prevent unauthorized access to Security Areas.
- c. Describe when random entry/exit inspections are permitted and give reasons for those inspections.
- d. Describe the articles that are prohibited from Security Areas as referenced in 10 CFR part 860 "Trespassing on Administration Property" and Title 41 CFR Part 101 "Federal Property Management Regulations."
- e. List the types of privately-owned articles that are prohibited from a Security Area.
- f. Describe the level of protection given to a Property Protection Area.
- g. Describe the level of protection, access requirements, and storage requirements for a Limited Area.
- h. Describe the level of protection, access requirements and storage requirements for an Exclusion Area.
- i. Describe the level of protection for a Protected Area.
- j. Discuss function and performance of personnel entry/exit and vehicle entry inspections for those entering a Protected Area.
- k. Describe the response to an intrusion alarm within a Protected Area.
- l. Describe the level of protection and access requirements for a Vital Area.
- m. Describe the level of protection for a Material Access Area.
- n. Discuss the entry/exit inspections required for a Material Access Area.
- o. Describe the response to an intrusion alarm within a Material Access Area.
- p. Describe the level of protection for Sensitive Compartmented Information Facilities.

2.4 Safeguards and security personnel acting in physical security shall demonstrate a working level knowledge of security areas as described in Department of Energy (DOE) Order 5632.7A, Protective Force Programs.

Supporting Knowledge and/or Skills

- a. Describe the requirements for an armed protective force.
- b. Discuss how responsibilities identified in a protective force job analysis relate to proficiency in the skills and abilities necessary to perform job tasks.
- c. Discuss specific laws regarding property of the United States and provisions of the Atomic Energy Act, as delineated by 10 CFR 1047 "Defense Programs; Limited Arrest Authority and Use of Force by Protective Force Officers" and 1049 "Limited Arrest Authority and Use of Force by Protective Force Officers of the Strategic Petroleum Reserve."
- d. Discuss the Departmental policy on the use of deadly force and limited arrest authority as set forth in 10 CFR 1047 "Defense Programs; Limited Arrest Authority and Use of Force by Protective Force Officers" and 1049 "Limited Arrest Authority and Use of Force by Protective Force Officers of the Strategic Petroleum Reserve."
- e. Discuss firearms safety procedures as related to issued duty weapons.
- f. Discuss firearms qualification requirements for all issued duty weapons.
- g. Discuss application of the authorization to carry firearms and make arrests without a warrant while performing official duties.
- h. Describe the situations, in which fresh pursuit guidelines and site-specific guidelines for fresh pursuit of criminals are invoked.
- i. Describe safety procedures in a fresh pursuit situation.
- j. Describe the difference between a misdemeanor and a felony.

Personnel Security

2.5 Safeguards and security personnel acting in personnel security shall demonstrate a working level knowledge of the programs described in the following Department of Energy (DOE) Orders:

- **DOE Order 5631.1C, Safeguards and Security Awareness Program**
- **DOE Order 5631.2C, Personnel Security Program**
- **DOE Order 5631.4A, Control of Classified Visits**
- **DOE Order 5631.6A, Personnel Security Assurance Program**

Supporting Knowledge and/or Skills

- a. Describe the general requirements for determining level of access authorization and investigative requirements.
- b. Discuss the elements for processing personnel security cases.
- c. Describe the processes used for screening and analysis of personnel security cases and methods for determining access authorization eligibility.
- d. Discuss the requirements for interim access authorizations.
- e. Describe when a "Data Report on Spouse" form must be filed.
- f. Describe the requirements and processes of access authorization for foreign nationals, dual citizens, and naturalized U.S. citizens.
- g. Discuss the extensions, transfers, terminations, and reinstatements of access authorizations.
- h. Describe the reinvestigation program.
- i. Discuss the requirements for the Personnel Security Assurance Program.
- j. Discuss the requirements of the Safeguards and Security Awareness Program.
- k. Discuss the requirements of the Classified Visits Program.

Material Control and Accountability

2.6 Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of the basic requirements of Material

Control and Accountability as described in Department of Energy (DOE) Order 5633.3B, Control and Accountability of Nuclear Materials.

Supporting Knowledge and/or Skills

- a. Using the site material control and accountability plan, discuss the following requirements:
 - Measurements and measurement control
 - Planning and management
 - Threat considerations
 - Performance criteria
 - Accounting system
 - Physical inventories
 - Control limits
 - Loss detection elements
 - Nuclear material alarms
 - Nuclear material access control
 - Containment
 - Surveillance
- b. Discuss the concept of "defense-in-depth" as it applies to material control and accountability.
- c. Discuss the material control and accountability aspects of the site and/or facility Emergency Plan(s).
- d. Explain the specific performance requirements for material control and accountability elements.
- e. Explain how nuclear materials are categorized using material type, attractiveness levels, and material quantities.
- f. Discuss how materials categorization relates to the graded safeguards principle.
- g. Discuss how vulnerability assessments, performance testing, and performance requirements serve as loss detection elements.
- h. Discuss the occurrence investigation and reporting requirements associated with material control and accountability.
- i. Discuss the administrative controls designed to prevent and detect material losses or diversions including internal reviews and assessment programs.

2.7 Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of materials accounting, as described in Department of Energy (DOE) Order 5633.3B, Control and Accountability of Nuclear Materials.

Supporting Knowledge and/or Skills

- a. Discuss how material accounting relates to the overall protection of nuclear material.
- b. Explain the specific requirements for the accounting system data base, procedures, and accounts.
- c. Describe the account structure for a facility.
- d. Describe the required records and reports to be maintained by a facility.
- e. Discuss the process of conducting, verifying, and reconciling physical inventories.
- f. Discuss the minimum required frequencies and special requirements for physical inventories by material category.
- g. Discuss the purpose and use of inventory verification/confirmation measurements.
- h. Discuss the data quality assurance elements of the requirements for measurements and measurement control and how they are monitored to ensure continuing control of measurement errors.
- i. Discuss the measurement control programs used at a facility.
- j. Discuss the requirements for the external material transfer program including the measurements and their time-frames.
- k. Discuss the requirements for the internal material transfer program.
- l. Discuss how material control indicators are analyzed and how an indicator is determined to be significant.
- m. Discuss the sampling methods used to determine physical inventory values.
- n. Describe the weighing techniques used to determine physical inventory values.
- o. Describe the analytical methods used to determine physical inventory values.

2.8 Safeguards and security personnel acting in material control and accountability personnel shall demonstrate a working level knowledge of the material control processes as described in Department of Energy (DOE) Order 5633.3B, Control and Accountability of Nuclear Materials.

Supporting Knowledge and/or Skills

- a. Discuss the requirements for controlling personnel access to nuclear materials, data, and property.

- b. Discuss the requirements for each of the following containment boundaries including category considerations: Protected Areas, Materials Access Areas; Materials Balance Areas; Storage Repositories; and, Processing Areas.
- c. Discuss the graded requirements for the materials surveillance program.
- d. Discuss how each of the detection/assessment elements listed in the Order addresses the potential for theft or diversion of nuclear material.

2.9 Safeguards and security personnel acting in material control and accountability shall demonstrate an expert level knowledge of the administrative controls required to ensure the integrity and quality of Material Control and Accountability systems and procedures as described in Department of Energy (DOE) Order 5633.3B, Control and Accountability of Nuclear Materials.

Supporting Knowledge and/or Skills

- a. Describe the content, review and approval requirements for facility material control and accountability procedures.
- b. Assess the material control and accountability procedures to ensure they are consistent with the approved material control and accountability plan.
- c. Describe the types of material control and accountability emergency procedures required.
- d. Assess the material control and accountability emergency procedures to ensure they are in compliance with DOE Order 5633.3B, Control and Accountability of Nuclear Materials.
- e. Assess the controls that limit access to the accounting system and nuclear materials accounting data.
- f. Describe the checks and balances that are required in the nuclear material accounting system.
- g. Assess the contractor's assessment program for the integrity and quality of the material control and accountability system.
- h. Determine when a review is required of a new and/or existing facility.
- i. Discuss the requirement for, and periodicity of, material control and accountability internal audits conducted by organizations independent of material control and accountability.

2.10 Safeguards and security personnel acting in material control and accountability shall demonstrate a working level knowledge of the documentation and reporting requirements for the national database as described in Department of Energy (DOE) Order 5633.3B, Control and Accountability of Nuclear Materials and the guidance document DOE 5633.3B, Guide of Implementation Instructions for Nuclear Materials Management and Safeguards System Reporting and Data Submission.

Supporting Knowledge and/or Skills

- a. Discuss the documentation requirements for nuclear material transactions.
- b. Describe content and reporting frequency for material balance reports.
- c. Discuss the inventory reporting requirements for nuclear materials.

- d. Describe the data processing procedures required for submitting data to the nuclear materials management and safeguards system.
- e. Assess the contractor's documentation and reporting of nuclear materials transactions.

Information Security

2.11 Safeguards and security personnel acting in information security shall demonstrate a working level knowledge of the classified computer security program as described in Department of Energy (DOE) Order 5639.6A, Classified Automated Information System Security Program, and DOE M-5639.6A-1, Manual of Security Requirements for the Classified Automated Information System Security Program.

Supporting Knowledge and/or Skills

- a. Discuss the on-site management and planning activities for automated information systems security.
- b. Discuss the assignment of automated information systems security responsibilities, authorities, and accountability.
- c. Discuss the required contents and maintenance of an automated information systems security plan.
- d. Perform an evaluation of the automated information systems security plan to verify its currency and conformity with Department of Energy Orders.
- e. Describe the local statement of threat to computing and information resources.
- f. Describe how the automated information systems security organization interfaces with the configuration management and planning processes.
- g. Describe how the automated information systems security organization interfaces with the site risk management program.
- h. Describe the automated information systems security awareness program and the automated information systems security organization's responsibilities for that program.
- i. Discuss the integration of TEMPEST considerations into automated information systems security planning.
- j. Describe the local automated information systems security inspection/review program.
- k. Describe the purpose and methodology of certification and accreditation of computing resources.

- l. Describe the methods used to provide protection of information assets on computing resources.
- m. Describe the methods used to provide physical protection of computing resource assets.
- n. Discuss the continuity and reliability of critical operations for computing resources.

2.12 Safeguards and security personnel acting in information security shall demonstrate a familiarity level knowledge of the requirements for information security as described in Department of Energy (DOE) Order 5639.8A, Security of Foreign Intelligence Information and Sensitive Compartmented Information Facilities.

Supporting Knowledge and/or Skills

- a. Discuss the purpose and scope of DOE Order 5639.8A, Security of Foreign Intelligence Information and Sensitive Compartmented Information Facilities.
- b. Describe the interrelationship of the following:
 - Foreign Intelligence Information
 - Sensitive Compartmented Information Facilities
 - Other information security programs
- b. Discuss the contents and use of DOE Procedural Guide - Security of Foreign Intelligence Information and Sensitive Compartmented Information and Facilities.
- c. Explain how Director of Central Intelligence Directives (DIDs) are utilized by Field elements.
- d. Discuss the goals, direction, and related duties and responsibilities with respect to the National Intelligence effort as set forth in Executive Order 12333, "United States Intelligence Activities."
- e. Discuss the requirements for safeguarding National Security Information as described in Executive Order 12356, "National Security Information."
- f. Describe the purpose, goals, and objectives of the Information Security Oversight office Directive No. 1 with regard to National Security Information.

2.13 Safeguards and security personnel acting in information security shall demonstrate an expert level knowledge of the requirements for control of Top Secret, Secret, and Confidential documents as described in the Department of Energy (DOE) Orders listed below.

- **DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests**
- **DOE M5632.1C-1, Manual for Protection and Control of Safeguards and Security Interests**

Supporting Knowledge and/or Skills

- a. Discuss classification levels and the degree of control required for each.
- b. Describe the appropriate clearance level for access to each classification level.
- c. Describe the proper storage of Top Secret matter not under personal control.
- d. Describe the protection requirements for Top Secret matter in storage.
- e. Describe the difference between the storage of Top Secret and Secret matter.
- f. Describe the differences between the storage of Secret and Confidential matter.
- g. Describe the responsibilities in the event that a repository or location containing classified matter is found unattended.
- h. Describe responsibilities in response to an intrusion detection alarm on a repository or location containing classified matter.
- i. Describe the procedures for receiving and transmitting classified matter.
- j. Describe the procedures for packaging classified matter for transmission outside of the facility.
- k. Discuss the procedures for transmitting classified matter outside of the Security Area.
- l. Describe the different ways of transmitting classified matter.
- m. Discuss the guidelines used for the reproduction of classified documents.
- n. Describe the proper way to dispose of classified matter.
- o. Describe the accountability records that must be maintained for accountable classified matter.
- p. Describe the proper way to mark a classified document.
- q. Describe the procedures for handling classified matter through the process of a contract termination or facility close-out.
- r. Describe the process used to report, assign, and resolve the loss of classified matter.

2.14 Safeguards and security personnel acting in information security shall demonstrate a familiarity level knowledge of the program described in Department of Energy (DOE) Order 5639.5, Technical Surveillance Countermeasures Program.

Supporting Knowledge and/or Skills

- a. Discuss the scope of the Order.
- b. Describe the basic elements of a technical surveillance countermeasures program.

2.15 Safeguards and security personnel acting in information security shall demonstrate a familiarity level knowledge of the program outlined in Department of Energy (DOE) Order 5639.7, Operations Security.

Supporting Knowledge and/or Skills

- a. Differentiate between Critical and Sensitive Information Lists (CSIL) and Essential Elements of Friendly Information (EEFI).
- b. Discuss the basic principles of:
 - Threat assessment
 - Risk analysis
- c. Discuss the basic principles of the selection of countermeasures.
- d. Describe the methodology used to develop a site-specific threat statement.
- e. Describe the purpose and outcomes of a vulnerability assessment.

2.16 Safeguards and security personnel acting in information security shall demonstrate an expert level knowledge of Department of Energy (DOE) Order 5650.2B, Identification of Classified Information.

Supporting Knowledge and/or Skills

- a. Discuss the responsibilities and authorities of the heads of Field elements, Field element and contractor classification officers, responsible reviewers, and Field element and contractor employees.
- b. Discuss the policies and objectives of the Department's classification program.
- c. Discuss the criteria for classification.
- d. Describe the classification levels, use of the term "unclassified," and mosaic compilation.
- e. Discuss the classification authorities.

- f. Discuss the classification guidance available within the Department.
- g. Describe the classification/security markings placed on a classified document.
- h. Discuss the authority and procedure to upgrade the classification of information and documents.
- i. Discuss the authority and procedure to reclassify information and documents.
- j. Discuss the classification status of research and development activities.
- k. Discuss the classification review of newly generated documents.
- l. Discuss the declassification and downgrading of classified information and documents.
- m. Discuss the policy, objectives, standards, and procedures for conducting classification appraisals.
- n. Explain the relationship between DOE Order 5650.2B, Identification of Classified Information; Executive Order 12958, National Security Information; 32 CFR 2001, National Security Information; and the Atomic Energy Act of 1954 as amended, with respect to classified information.

All Safeguards and Security Personnel

2.17 Safeguards and security personnel shall demonstrate a familiarity level knowledge of the Design Basis Threat Policy for the Department of Energy Programs and Facilities.

Supporting Knowledge and/or Skills

- a. Describe how the design basis threat is used in safeguards and security planning.
- b. Describe the method used to identify and characterize the range of potential adversary threats.
- c. Discuss the responsibilities of safeguards and security personnel of in the development of a design basis threat.

2.18 Safeguards and security personnel shall demonstrate a familiarity level knowledge of the planning process described in Department of Energy (DOE) Order 5630.14A, Safeguards and Security Program Planning.

Supporting Knowledge and/or Skills

- a. Discuss the contents of, and interrelationship between, the Site-Specific Security Plan, Master Safeguards and Security Agreements, Facility Descriptions and Operational Plans, and Resources Plan.
- b. Discuss the processes for reviewing and validating Site-Specific Security Plans, Master Safeguards and Security Agreements, Facility Descriptions and Operational Plans, and Resources Plan.
- c. Discuss the resources necessary to develop a site safeguards and security plan including necessary site documentation and on-call expertise.

2.19 Safeguards and security personnel shall demonstrate a working level knowledge of Department of Energy (DOE) Order 5630.16A, Safeguards and Security Acceptance and Validation Testing Program.

Supporting Knowledge and/or Skills

- a. Assess the facility's acceptance and validation test for safeguards and security that validate functional requirements and effectiveness of safeguards and security elements that have been implemented and are operating as part of a total system.
- b. Assess the contractor's ability to identify and test critical system elements during acceptance and validation tests.
- c. Discuss the required frequency of performance testing.
- d. Describe the required sections of the safeguards and security acceptance and validation test program plan.
- e. Describe the required sections of the safeguards and security validation test plan.
- f. Discuss the required sections of the safeguards and security acceptance and validation test reports.
- g. Describe what determines unsatisfactory test results and how these are resolved.

2.20 Safeguards and security personnel shall demonstrate a familiarity level knowledge of Department of Energy (DOE) Order 5634.1B, Facility Approvals, Security Surveys, and Nuclear Materials Surveys.

Supporting Knowledge and/or Skills

- a. Discuss the responsibilities and authorities of the heads of Field elements.
- b. Describe the facility importance rating and approval systems.
- c. Describe the general survey requirements.
- d. Describe the process for conducting safeguards and security surveys.

- e. Describe the actions systems for survey ratings and follow-up.

2.21 Safeguards and security personnel shall demonstrate a familiarity level of knowledge of the programs outlined in Department of Energy (DOE) Order 5639.7, Operations Security.

Supporting Knowledge and/or Skills

- a. Describe the Department's Operations Security (OPSEC) program structure.
- b. Discuss the responsibilities of the OPSEC Manager.
- c. Discuss the activities, composition, and authorities of an OPSEC Working Group.

2.22 Safeguards and security personnel shall demonstrate a familiarity level of knowledge of the classified computer security program as described in Department of Energy (DOE) Order 5639.6A, Classified Automated Information System Security Program, and DOE Manual 5639-6A.1, Manual of Security Requirements for the Classified Automated Information System Security Program.

Supporting Knowledge and/or Skills

- a. Describe the types of automated information system security activities that are classified.
- b. Discuss examples of classified automated information system security programs.
- c. Identify and describe the classified automated information system security standards, policies, procedures, and objectives related to safeguards and security.

2.23 Safeguards and security personnel shall demonstrate a familiarity level knowledge of Department of Energy (DOE) Order 5633.3B, Control and Accountability of Nuclear Materials.

Supporting Knowledge and/or Skills

- a. Discuss the basic requirements of material control and accountability.
- b. Describe in general how the material control and accountability materials accounting systems provides a complete audit trail of all nuclear material from receipt through disposition.
- c. Describe the general requirements of the material control and accountability physical inventory program for nuclear materials.
- d. Describe the general requirements and controls of the material control and accountability nuclear material transfer programs.

- e. Discuss in general the four functional performance areas of nuclear material control.

2.24 Safeguards and security personnel shall demonstrate a working level knowledge of Department of Energy (DOE) Order 5650.2B, Identification of Classified Information.

Supporting Knowledge and/or Skills

- a. Discuss the responsibilities of Field elements and contractor employees in identifying classified information.
- b. Discuss the general policies and objectives of the Department's classification program.
- c. Discuss the criteria for classification.
- d. Describe the classification levels, use of the terms "unclassified," and "mosaic compilation."
- e. Discuss the availability of site classification guidance.
- f. Describe the classification/security markings placed on a classified document.

2.25 Safeguards and security personnel shall demonstrate a familiarity level knowledge of the requirements for control of Top Secret, Secret, and Confidential documents as described in the Department of Energy (DOE) directives listed below:

- **DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests**
- **DOE M5632.1C-1, Manual for Protection and Control of Safeguards and Security Interests**

Supporting Knowledge and/or Skills

- a. Discuss classification levels and the degree of control required for each of the above directives.
- b. Describe the appropriate clearance level for access to each classification level.

2.26 Safeguards and security personnel shall demonstrate a working level knowledge of Department of Energy (DOE) Order 5639.1, Information Security Program.

Supporting Knowledge and/or Skills

- a. Discuss the purpose and policy statements associated with the Department's information security program.
- b. Describe the major elements of the information security program.

- c. Discuss the duties and responsibilities of the following positions as they pertain to the information security program:
 - Heads of departmental elements
 - Heads of field organization
 - Information security program operations managers
 - Procurement request originators
 - Contracting officers
- d. Describe the facility's chain of responsibility for information security.
- e. Discuss the facility's security organization program guidelines.
- f. Describe the process of dealing with classified matter that cannot be accounted for.
- g. Describe the process of dealing with the compromise of classified matter.
- h. Describe the process of making a damage assessment.
- i. Describe the process of determining, assigning, and reporting a security infraction of classified information.

2.27 Safeguards and security personnel shall demonstrate a familiarity level knowledge of Department of Energy (DOE) Order 5630.11B, Safeguards and Security Program.

Supporting Knowledge and/or Skills

- a. Discuss the policy set forth in this order.
- b. Describe the purposes of safeguards and discuss the types of activities used to accomplish these purposes.
- c. Define "security."
- d. Identify the key program elements of the safeguards and security program and describe the authorities and responsibilities of each.
- e. Discuss the use of risk analysis as it applies to safeguards and security programs.
- f. Discuss the purpose of independent assessments of safeguards and security programs.
- g. Discuss the purpose of alternative means and deviations including the following terms:
 - Variance
 - Waiver
 - Exception

2.28 Safeguards and security personnel shall demonstrate a familiarity level knowledge of the Safeguards and Security-related aspects of Department of Energy (DOE) Order 6430.1A, General Design Criteria.

Supporting Knowledge and/or Skills

- a. Discuss the purpose of this Order.
- b. Discuss the policies and objectives of the Order.
- c. Given a scenario involving the design, acquisition, or maintenance of a facility, identify the safeguards and security-related sections of the General Design Criteria.

3. ADMINISTRATIVE

NOTE: When Department of Energy (DOE) directives are referenced in the qualification standard, the most recent revision should be used.

3.1 Safeguards and security personnel shall demonstrate a working level knowledge of methods to maintain communication with Headquarters, Field elements, regulatory agencies, the public, and other stakeholders.

Supporting Knowledge and/or Skills

- a. Describe the Department's organization and discuss the Department's procedures for communicating between elements.
- b. Describe the Department's procedures and policy for communicating with regulatory agencies.
- c. Demonstrate the ability to present technical ideas in general terms to the public.
- d. Define conflict and discuss the win-lose and win-win methods of conflict resolution.
- e. Discuss the purpose and describe the roles and responsibilities of safeguards and security personnel for the following Department of Energy (DOE) Orders:
 - DOE Order 5500.4A, Public Affairs Policy and Planning Requirements for Emergencies
 - DOE Order 1700.1, Freedom of Information Program
- f. Identify the internal and external groups with which the safeguards and security personnel interface.
- g. Describe the different types of media that may be utilized to communicate with these groups and discuss the advantages and disadvantages of each.

3.2 Safeguards and security personnel shall demonstrate a familiarity level knowledge of contract management and administration sufficient to appraise contractor organizations participating in the safeguards and security programs.

Supporting Knowledge and/or Skills

- a. Discuss the key elements of the contractual relationship between the Department and its contractors.
- b. Discuss the roles and responsibilities of safeguards and security personnel in the contract management and administration processes.

4. MANAGEMENT, ASSESSMENT, AND OVERSIGHT

NOTE: When Department of Energy (DOE) directives are referenced in the qualification standard, the most recent revision should be used.

Due to the specialized nature of the Safeguards and Security Functional Area, safeguards and security personnel shall complete the appropriate competency statements (4.1 - 4.7) as determined by line management consistent with assigned specialties. These competency statements correspond to the disciplines: Physical Security (4.1 and 4.2); Personnel Security (4.3); Materials Control and Accountability (4.4); and, Information Security (4.5 - 4.7). The remaining competency statements (4.8 - 4.16) shall be completed by all safeguards and security personnel.

Physical Security

- 4.1 Safeguards and security personnel acting in physical security shall demonstrate the ability to review the contractor's protection program for approval as described in DOE Order 5632.1C, Protection and Control of Safeguards and Security Interests.**

Supporting Knowledge and/or Skills

- a. Conduct an assessment of the contents and accuracy of the contractor's protection and control planning.
- b. Assess the contractor's methods for protecting special nuclear material and vital equipment.
- c. Assess the contractor's program for protecting and controlling classified matter.
- d. Review and approve the contractor's program for protecting and controlling unclassified irradiated reactor fuel in transit.
- e. Assess the contractor's program for establishing, controlling, and maintaining security and restricted access areas.
- f. Assess and approve the following protection elements established by the contractor:
 - Intrusion detection and assessment systems
 - Control and entry/exit inspections
 - Barriers and locks
 - Secure storage
 - Communications
 - Acceptance and validation testing
 - Maintenance
 - Posting notices
 - Security badges and credentials

- g. Review for approval the contractor's protective force orders, plans, and procedures.

4.2 Safeguards and security personnel acting in physical security shall demonstrate the ability to assess the contractor's protection program operations in accordance with Department of Energy (DOE) Order 5632.7A, Protective Forces.

Supporting Knowledge and/or Skills

- a. Assist in designing and evaluating a force-on-force performance test.
- b. Assist in designing and evaluating an emergency management performance test.
- c. Assist in designing and evaluating a limited scope performance test of protective forces.

Personnel Security

4.3 Safeguards and security personnel acting in personnel security shall demonstrate the ability to assess the personnel security program as described in the following Department of Energy (DOE) Orders:

- **DOE Order 5631.1C, Safeguards and Security Awareness Program**
- **DOE Order 5631.2C, Personnel Security Program**
- **DOE Order 5631.4A, Control of Classified Visits**
- **DOE Order 5631.6A, Personnel Security Assurance Program**

Supporting Knowledge and/or Skills

- a. Assess Department of Energy (DOE) or contractor strategies for maintaining the minimum number of access authorizations consistent with operational efficiency.
- b. Assess the effectiveness of management and operating contractor pre-processing checks conducted in accordance with Department of Energy Acquisition Regulations (DEAR).
- c. Assess contractor compliance with requirements for timely reporting of access authorization terminations to the Department of Energy (DOE).
- d. Assess Department of Energy (DOE) personnel security staff capability to effectively adjudicate information contained in reports of investigation, personnel security interviews, and Department sponsored mental evaluations.
- e. Assess Department of Energy (DOE) procedures for developing security investigation funding estimates in response to budget calls.
- f. Assess the completeness/compliance factors of Personnel Security Assurance Program Plans approved by Field Office managers.

- g. Assess the effectiveness of procedures implemented by the Department of Energy (DOE) Headquarters and Field Offices to approve/process requests for classified visits.
- h. Assess Department of Energy (DOE) Field Office and Headquarters compliance with the intent of the requirements/guidance of the Safeguards and Security Awareness Program.

Material Control and Accountability

4.4 Safeguards and security personnel acting in materials control and accountability shall demonstrate the ability to assess a program as described in Department of Energy (DOE) Order 5633.3B, Control and Accountability of Nuclear Materials.

Supporting Knowledge and/or Skills

- a. Participate in a vulnerability assessment designed to identify and assess the capability for detecting the loss of a Category I quantity of Special Nuclear Material.
- b. Assess whether the contractor's performance testing program for material control and accountability meets the requirements of DOE Order 5630.16A, Safeguards and Security Acceptance and Validation Testing Program.
- c. Assess the contractor's programs and processes for occurrence investigation and reporting of material control and accountability related incidents.
- d. Assess the facility's administrative controls that ensure the integrity and quality of systems and procedures for Material Control and Accountability.

- e. Assess the facility's nuclear materials accountability system that tracks nuclear material inventories, documents nuclear material transactions, issues periodic reports, and assists in detecting unauthorized system access, data falsification, and material gains or losses.
- f. Audit the facility's physical inventory program for nuclear materials.
- g. Assess the facility's graded program for controlling personnel access to: nuclear materials; data for nuclear materials accountability, inventory, and measurement; data generating equipment; and, other items/equipment where misuse or tampering could lead to compromise of the safeguards system.
- h. Assess the contractor's graded surveillance program for monitoring nuclear materials, detecting unauthorized activities or anomalous conditions, and for reporting material and facility status.
- i. Assess the contractor's capability to detect and assess the unauthorized removal of nuclear materials.

Information Security

- 4.5 Safeguards and security personnel acting in information security shall demonstrate the ability to assess the contractor's classified computer security programs in accordance with Department of Energy (DOE) Order 5639.6A, Classified Automated Information System Security Program, and DOE Manual 5639.6A-1, Manual of Security Requirements for the Classified Automated Information System Security Program.**

Supporting Knowledge and/or Skills

- a. Assess the contractor's management and planning programs for computer security.
- b. Assess the contractor's program for the protection of information assets.
- c. Assess the contractor's programs for the physical protection of computing resource assets.
- d. Assess of the contractor's programs that ensure continuity and reliability of critical operations.

- 4.6 Safeguards and security personnel acting in information security shall demonstrate the ability to assess the effectiveness and efficiency of the local organization's management program in meeting security objectives for information security.**

Supporting Knowledge and/or Skills

- a. Assess the contractor's procedures for document and material control.
- b. Assess the contractor's self-inspection program for information security.
- c. Perform a Foreign Ownership, Control, or Influence (FOCI) determination of a contractor.

4.7 Safeguards and security personnel acting in information security shall demonstrate the ability to assess the contractor's control of Top Secret, Secret, and Confidential documents in accordance with Department of Energy (DOE) Order 5632.1C, Protection and Control of Safeguards and Security Interests, and DOE M5632.1C -1, Manual for Protection and Control of Safeguards and Security Interests.

Supporting Knowledge and/or Skills

- a. Assess the contractor's practices during all phases of the control and use of Secret and Confidential matter.
- b. Assess the contractor's practices during all phases of the control and use of Top Secret matter.
- c. Given a hypothetical security infraction, simulate the process of reporting and disposing of the infraction.

All Safeguards and Security Personnel

4.8 Safeguards and security personnel shall demonstrate a familiarity level knowledge of financial management to meet commitments to quality, cost, and schedule for safeguards and security.

Supporting Knowledge and/or Skills

- a. Define and compare the terms "cost estimate" and "budget."
- b. Describe the process for preparing cost estimates and budget.
- c. Describe and compare labor and non-labor costs.
- d. Describe and compare direct and indirect costs.
- e. Discuss methods of reducing indirect costs.
- f. Discuss the types of projects and the methods for funding these projects.

4.9 Safeguards and security personnel shall demonstrate a working level knowledge of assessment techniques (such as planning and use of observations, interviews, and document reviews) to assess facility performance, report results of assessments, and follow-up on actions taken as the result of assessments.

Supporting Knowledge and/or Skills

- a. Describe the role of safeguards and security personnel in overseeing Government-Owned Contractor-Operated (GOCO) facilities.
- b. Describe the assessment requirements and limitations associated with safeguards and security personnel's interface with contractor employees.
- c. Conduct an interview representative of one which would be conducted during an occurrence investigation.
- d. Explain the essential elements of a performance-based assessment including investigation, fact-finding, and reporting.
- e. Describe the contents of an assessment report.
- f. Explain the essential elements and processes associated with the following assessment activities:
 - Exit interviews
 - Closure process
 - Tracking to closure
 - Follow-up
 - Contractor corrective action implementation
- g. Describe the actions to be taken if the contractor challenges the assessment findings and explain how such challenges can be avoided.
- h. Participate in formal meetings between Department management and senior contractor management to discuss results of safeguards and security assessments.

4.10 Safeguards and security personnel shall demonstrate a working knowledge of problem analysis and techniques necessary to identify problems, determine potential causes of problems, and identify corrective action.

Supporting Knowledge and/or Skills

- a. Describe and explain the application of problem analysis techniques including the following:
 - Root cause analysis
 - Causal factor analysis
 - Change analysis
 - Barrier analysis
 - Management oversight risk tree analysis
- b. Describe and explain the application of the following root cause analysis processes in the performance of occurrence investigations:

- Events and causal factor charting
 - Root cause coding
 - Recommendation generation
- c. Describe the following types of investigations and discuss an example of the application of each:
- Type A
 - Type B
 - Type C
- d. Compare and contrast immediate, short term, and long term actions taken as the result of a problem identification or an occurrence.
- e. Describe various data gathering techniques and the use of trending/history when analyzing problems.

4.11 Safeguards and security personnel shall demonstrate the ability to apply problem analysis techniques necessary to identify problems, determine potential causes of problems, and identify corrective action.

Supporting Knowledge and/or Skills

- a. Given event and/or occurrence data, apply problem analysis techniques and identify the problems and how they might have been avoided.
- b. Participate in a Type A, B, or C investigation.
- c. Participate in a contractor or Department problem analysis and critique the findings and results.
- d. Using data, interpret two fault tree analyses.

4.12 Safeguards and security personnel shall demonstrate the ability to trend contractor performance related to safeguards and security in accordance with Department of Energy (DOE) Order 5480.26, Trending and Analysis of Operations Information Using Performance Indicators.

Supporting Knowledge and/or Skills

- a. Discuss the key processes used in trending and analysis of safeguards and security information.
- b. Using an actual list of performance indicators (e.g., security infractions/violations, property loss, inventory deficiencies), determine what type of assessments should be performed and in what areas.

- c. Given a set of incident/occurrence report data for a specified period, analyze the information for safeguards and security performance, trends, or compliance problems.

4.13 Safeguards and security personnel shall demonstrate the ability to assess the contractor's ability to develop program plans in accordance with Department of Energy (DOE) Order 5630.14A, Safeguards and Security Program Planning, and DOE Order 5630.13A, Master Safeguards and Security Agreements.

Supporting Knowledge and/or Skills

- a. Assess the contractor's Site Safeguards and Security Plan for inclusion of site-wide Master Safeguards and Security Agreements (MSSA), Facility Descriptions and Operational Plans, and Resource Plans.
- b. Assess the contractor's Facility Descriptions and Operational Plans to ensure that the plans describe the site protection strategies, facility protection systems, and programs currently in place.
- c. Assess the contractor's Resource Plan to ensure that it presents a five year projection of the upgrades and their associated costs in addressing the vulnerabilities and risks agreed to in the Master Safeguards and Security Agreements.
- d. Assess an Master Safeguards and Security Agreement to ensure that performance levels are based on performance indicators such as vulnerability assessments, system performance tests, surveys, inspections, evaluations, and training levels.
- e. Assess the supporting documentation (vulnerability assessments, cost/benefit analyses, implementation procedures, guidelines, performance exercises, etc.) used for the development and validation of a Master Safeguards and Security Agreement.

4.14 Safeguards and security personnel shall demonstrate a familiarity level knowledge of approvals and surveys in accordance with Department of Energy (DOE) Order 5634.1B, Facility Approvals, Security Surveys, and Nuclear Materials Surveys.

Supporting Knowledge and/or Skills

- a. Describe the approval process of a new facility or interest at a Department facility.
- b. Discuss the safeguards and security survey process.
- c. Discuss the ratings given during a safeguards and security survey.
- d. Discuss the appropriate follow-up actions necessary for each type of survey rating.

4.15 Safeguards and security personnel shall demonstrate a familiarity level knowledge of the general principles of project management as described in Department of Energy (DOE) Order 4700.1, Project Management System.

Supporting Knowledge and/or Skills

- a. Discuss the purpose and requirements of the Order.
- b. Discuss the responsibilities of safeguards and security personnel participating in the Department project management system in terms of the administration and coordination of the safeguards and security programs.

4.16 Safeguards and security personnel shall demonstrate a working level knowledge of effective negotiation skills.

Supporting Knowledge and/or Skills

- a. Discuss the essential elements of effective negotiation.
- b. Describe how to develop and use strategies of negotiation.
- c. Describe how the following pre-negotiation elements are accomplished and/or developed:
 - Objectives/desired outcomes
 - Information gathering
 - Analysis of other party's objectives
 - Identify needs of both parties
- d. Participate in negotiation activities with peers, Department management, and/or contractor personnel.

EVALUATION REQUIREMENTS

The following requirements shall be met to complete the Department-wide Safeguards and Security Functional Area Qualification Standard. The evaluation process identified below serves as a measurement tool for assessing whether the participants have acquired the technical competencies outlined in this Standard.

1. Documented completion of the Department-wide General Technical Base Qualification Standard in accordance with the requirements contained in that standard.
2. Documented completion of the competency requirements listed in this functional area qualification standard. Documentation of the successful completion of these competency requirements may be satisfied by a qualifying official using any of the following methods:
 - Documented evaluation of equivalencies
 - Written examination
 - Documented oral evaluation
 - Documented observation of performance

CONTINUING TRAINING AND PROFICIENCY REQUIREMENTS

Safeguards and security personnel shall participate in an Office/facility/position-specific continuing training and qualification program that includes the following elements:

1. Technical education and/or training covering topics directly related to the duties and responsibilities of safeguards and security personnel as determined by line management. This may include courses and/or training provided by:
 - Department of Energy
 - Other Government agencies
 - Outside vendors
 - Educational institutions
2. Training covering topics that address identified deficiencies in the knowledge and/or skills of safeguards and security personnel.
3. Training in areas added to the Safeguards and Security Functional Area Qualification Standard since initial qualification.
4. Specific continuing training requirements shall be documented in Individual Development Plans (IDPs).